

TITLE: Aerosol Remote Sensing from Space – Where We Stand, Where We're Heading

Ralph Kahn
NASA/Goddard Space Flight Center

University of Washington
September 14, 2012

ABSTRACT: The MISR and MODIS instruments aboard the NASA Earth Observing System's Terra Satellite have been collecting data containing information about the state of Earth's atmosphere and surface for over twelve years. Among the retrieved quantities are the amount and type of wildfire smoke, desert dust, volcanic effluent, urban and industrial pollution particles, and other aerosols. Data from these instruments have been used to develop a global, monthly climatology of aerosol amount that is widely used as a constraint on climate models, including those used for the 2007 IPCC assessment report.

However, the broad scientific challenges of understanding aerosol impacts on climate and health place different, and very exacting demands on our measurement capabilities. And these data sets, though much more advanced in many respects than previous aerosol data records, are imperfect. The next frontier in assessing aerosol radiative forcing of climate is aerosol type, and in particular, the absorption properties of major aerosol air masses. In this presentation, I will summarize current understanding of MISR and MODIS aerosol product strengths and limitations, discuss how they relate to the bigger aerosol science questions we must address, and give my view of the way forward.

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Ralph Kahn, Senior Research Scientist, NASA/Goddard Space Flight Center

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